

Application No.: 09/381,061
Attorney Docket No.: FUK-59
RCE Submission Dated: April 4, 2005
Reply for Final Office Action Dated: October 3, 2003

AMENDMENTS TO THE CLAIMS

Claim 1: (CURRENTLY AMENDED) A substrate body-floating apparatus for blowing
[[an]] a gas flow onto a rear surface of a substrate body to float and rotate the substrate body
comprising:

5 a floating unit having a surface with a plurality of fine floating pores configured for
floating the substrate body, a plurality of fine centering pores configured for centering the
substrate body at a center of a substrate body-floating apparatus, a plurality of fine rotational
pores configured for rotating the substrate body at a center of said apparatus, and a plurality of
auxiliary fine suppression pores configured for suppressing surface vibration of the substrate
body when the substrate body is rotated ~~at a high speed~~, wherein said plurality of auxiliary fine
10 suppression pores being located radially further away from a center of the floating unit surface
than said plurality of fine centering pores and said plurality of fine rotational pores;

each pore type of said fine floating pores, said fine centering pores, said fine rotational
pores, and said auxiliary fine suppression pores having a relative positioning and a directionality
associated therewith, the relative positioning and the directionality of a particular pore type being
15 unique to that said particular pore type with respect to others of said pore types, the relative
positioning and the directionality associated with a given said pore type determining the direction
of gas emission therethrough, wherein all pore types of said fine floating pores, said fine
centering pores, said fine rotational pores, and said auxiliary fine suppression pores are provided
on a surface of said floating unit and are inclined against the surface of said floating unit, each of

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20 said pores having an inclination associated therewith, ~~[[an]]~~ a gas flow being injected into each of said pores in a direction of the inclination thereof.

Claim 2 (CANCELLED)

Claim 3 (PREVIOUSLY PRESENTED): The substrate body-floating apparatus according to claim 1 wherein a surface of said floating unit is divided into four quadrants, a plurality of said fine floating pores being provided in each quadrant, each said fine floating pores within a given one of said quadrants having a same floating pore direction as each of the other said fine floating pores located in said given one of said quadrants, said same floating pore direction being parallel
5 to a diagonal line of said given one of said quadrants, said diagonal line being oriented to a center of said floating unit.

Claim 4 (PREVIOUSLY PRESENTED): The substrate body-floating apparatus according to claim 1 wherein said plurality of fine centering pores configured for centering are located at positions that are one of on an outer periphery of the substrate body and on an outer side from the outer periphery, each said fine centering pores being angularly displaced, relative to a center of
5 said floating unit, from each adjacent said fine centering pore, said plurality of fine centering pores each having a fine centering pore direction associated therewith, each said fine centering pore direction being oriented toward said center of said floating unit.

Claim 5 (CURRENTLY AMENDED): ~~The substrate body-floating apparatus according to claim 1~~ A substrate body-floating apparatus for blowing a gas flow onto a rear surface of a substrate body to float and rotate the substrate body, said apparatus comprising:

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5 a floating unit having a surface with a plurality of fine floating pores configured for floating the substrate body, a plurality of fine centering pores configured for centering the substrate body at a center of a substrate body-floating apparatus, a plurality of fine rotational pores configured for rotating the substrate body at a center of said apparatus, and a plurality of auxiliary fine suppression pores configured for suppressing surface vibration of the substrate body when the substrate body is rotated;

10 wherein said plurality of auxiliary fine suppression pores being located radially further away from a center of the floating unit surface than said plurality of fine centering pores and said plurality of fine rotational pores;

15 wherein said plurality of fine rotational pores are located at positions on a circle with a radius smaller than the radius of the substrate body and centered around a center of a surface of said floating unit, said adjacent fine rotational pores being directed away from one another in substantially opposite directions, said substantially opposite directions being approximately tangential to said circle.

5 Claim 6 (CURRENTLY AMENDED): The substrate body-floating apparatus according to claim 1 where said plurality of auxiliary fine suppression pores each have an auxiliary fine suppression pore orientation direction, each said auxiliary fine suppression pore orientation direction being directed ~~oriented~~ toward a center of said floating unit, each said auxiliary fine suppression pore being located on a periphery of a circle extending radially beyond the position of said plurality of fine ~~rotational~~ centering pores, said circle being concentric with a center of

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said floating unit, said auxiliary fine suppression pore orientations directions for a set of adjacent said auxiliary fine suppression pores being angled at 90 degrees relative to one another.

Claim 7 (CURRENTLY AMENDED): A substrate body-floating type of heater comprising:

a floating means for applying air to a rear surface of a substrate body to float, rotate and suppress vibration to the substrate body, said floating means including a plurality of ~~floatation~~ flotation pores, a plurality of rotational pores, and a plurality of vibration suppression pores therein, said flotation pores, said rotational pores, and said vibration suppression pores being positioned and directed so as to promote one of ~~floatation~~ flotation, rotation, and vibration suppression, respectively, via gas flow control, the relative positioning and the directionality associated with a particular pore type being unique to that said particular pore type with respect to others of said pore types; and

an optical lamp for heating a surface of the substrate body[.];

wherein said plurality of vibration suppression pores being located radially further away from a center of said floating means than said plurality of rotational pores.

Claim 8 (CURRENTLY AMENDED): A substrate body-floating type of film-forming apparatus comprising:

a floating means for applying gas to a rear surface of a substrate body to float, rotate and suppress vibration to the substrate body under atmospheric or under depressurized conditions for forming a film of deposited material on a surface of the substrate body, said floating means including a plurality of ~~floatation~~ flotation pores, a plurality of rotational pores, and a plurality of

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vibration suppression pores therein, said ~~floatation~~ flotation pores, said rotational pores, and said suppression pores each being positioned and directed so as to promote one of ~~floatation~~ flotation, rotation, and vibration suppression, respectively, via gas flow control, the relative positioning and the directionality associated with a particular pore type being unique to that said particular pore type with respect to others of said pore types[.];

wherein said plurality of vibration suppression pores being located radially further away from a center of said floating means than said plurality of rotational pores.

Claim 9 (PREVIOUSLY PRESENTED): The substrate body-floating type of film-forming apparatus according to claim 8, further comprising a nozzle for blowing gas for film formation onto a surface of the substrate body, said nozzle having a nozzle internal diameter, said nozzle internal diameter and an external diameter of the substrate body are set to substantially the same values and a clearance between a tip of the nozzle for blowing the gas and a surface of the substrate body is set to 2 mm or less.

Claim 10 (CANCELLED)